Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	**)**	
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Review of the Commission's Rules Governing the 896-901 / 935-940 MHz Band	**)**	**ET Docket No. 17-200**
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To: The Commission
Via: Electronic Comment Filing System

COMMENTS OF JVCKENWOOD USA CORPORATION

JVCKENWOOD USA Corporation ("JVCKENWOOD"), a major manufacturer and developer of communications equipment for, among other purposes, public safety and industrial/business land mobile communications systems, hereby respectfully submits its comments in response to the *Notice of Proposed Rulemaking*, FCC 19-18, 84 Fed. Reg. 12987 *et seq*., released March 14, 2019 in the above captioned proceeding (the "Notice").[1] The Notice seeks comment on the Commission's proposal to realign the band 896-901/935-940 MHz (the "900 MHz" band) so as to create therein a commercial broadband segment. This proceeding is based on a 2014 "*Petition for Rulemaking of the Enterprise Wireless Alliance and Pacific DataVision, Inc*." [2] which requested that the Commission commence a rulemaking proceeding, conceptually as proposed herein (largely for the exclusive benefit of Pacific Datavision, n/k/a pdvWireless, Inc., which held at the time, and now, most of the narrowband SMR MTA licenses in almost every MTA in the United States). The Commission subsequently issued a *Notice of*

[1] Per the *erratum*, 84 Fed. Reg. 14641 (published April 11, 2019) the correct comment date in this proceeding was stated to be June 3, 2019. Therefore, these comments are timely filed.
[2] *See* the *Petition for Rule Making* (the Petition) filed November 17, 2014 by Enterprise Wireless Alliance (EWA) and Pacific DataVision, Inc., RM-11738.

Inquiry asking for comment on the possibility of reconfiguring the band to include a broadband segment.[3] In opposition to the Commission's proposal in the *Notice* to reallocate (at least) six of the ten megahertz comprising this band, to be auctioned for commercial broadband purposes, JVCKENWOOD states as follows:

I. Introduction.

1. There are numerous difficulties with the Commission's proposal in this proceeding. First, the *Notice* does not establish that there exists a current need to convert three-fifths of the 900 MHz band from narrowband configuration to broadband. Such an action would disrupt incumbent licensees' operations in the band on a scale of complexity that approaches the 800 MHz rebanding effort, and it would have a preclusive effect in many markets on the ability of narrowband incumbents to expand their operations at 900 MHz. It would also preclude in many markets the entry of new licensees wishing to construct new narrowband systems. There has never, since 2004, been a fair opportunity for narrowband land mobile use to develop in this band, unencumbered by purposefully-enacted regulatory impediments. Given the restrictive regulatory history of the 900 MHz band, the Commission does not have an evidentiary basis sufficient to allow the conclusion that there is significant demand for broadband spectrum at 900 MHz, or that such demand could outweigh the need to allow a reasonable period of time when applications for new or expanded Business/Industrial and Land Transportation (B/ILT) and Specialized Mobile Radio (SMR) narrowband facilities can be filed and new narrowband facilities are allowed to be constructed. Nor is there record evidence that the Commission has evaluated the need (which JVCKENWOOD asserts is acute), to relieve some of the current,

[3] See, *Review of the Commission's Rules Governing the 896-901/935-940 MHz Band; Realignment of the 896-901/935-940 MHz Band to Create a Private Enterprise Broadband Allocation; Amendment of the Commission's Rules to Allow for Specialized Mobile Radio Services Over 900 MHz Business/Industrial Land Transportation Frequencies*, Notice of Inquiry, 32 FCC Rcd 6421(2017).

severe (and worsening) congestion in the UHF land mobile allocations and at 800 MHz. This proceeding was predicated *ab initio* upon a Petition filed by a single business entity that already held most of the SMR licenses in the United States,[4] which proposed to create a broadband service that, as initially proposed, would foreclose other entities from participating. That Petition did not justify the issuance of the *Notice of Inquiry* in this proceeding or the instant *Notice*. The Commission's planning for this broadband allocation (which appears from the discussion in the *Notice* to have been quite limited) is premised on a need that is neither demonstrated nor quantified, but merely presumed; and there is no comparative analysis of the relative need for continued or expanded narrowband operation as an alternative to the creation of a broadband segment in this band.

2. Even if there was substantial record evidence of an ascertained, articulated demand for broadband operation at 900 megahertz, the Commission has not, in the four corners of the *Notice*, made adequate provision in the proposed implementation plan: (a) for protection of incumbent 900 MHz licensees; (b) for relocation of displaced narrowband licensees; or (c) for any necessary future expansion of, or increased demand for narrowband land mobile operation at 900 MHz. There are neither estimates of the numbers of displaced narrowband users, nor a proposed migration plan to provide equivalent replacement spectrum.[5] Since the *Notice* does not limit its proposed broadband allocation to two, 3 megahertz broadband segments, but instead asks for comment, alternatively, on the possible conversion of the *entirety of the band* to broadband, the *Notice* fails to propose a comprehensive or reasonable plan for accommodation of

[4] At page iii of the EWA/PDV Petition for Rule Making, it was noted that "in most cases, Pacific DataVision, Inc., which holds most SMR MTA licenses in virtually every MTA in the country" would become the broadband provider.

[5] The *Notice* infers that displacement in this band is not an issue because it presumes that the communications needs of those narrowband licensees displaced by broadband at 900 MHz can be addressed by those same broadband facilities. There is no evidence that such a presumption is correct.

narrowband users in other bands. In other words, the instant *Notice* reads very much like a Further Notice of Inquiry. If the record developed to date does not support a specific proposal for a specific course of action, which JVCKENWOOD suggests is the case, it would appear premature to propose to adopt the rules in the Appendix.

3. Finally, assuming for the moment that what appears to be the Commission's primary proposal - to create two, 3 megahertz broadband segments in the band - is to be the actual proposal, the technical parameters proposed for the broadband operation, especially the out-of-band emission limits, are unexplained and inadequate in terms of protecting incumbent narrowband operations using present-generation deployed equipment. Incumbents will be relegated either to the proposed, 500 kilohertz narrowband segments or the proposed 1.5 megahertz narrowband segments, into which the Commission proposes to concentrate incumbents. These proposed residual narrowband segments appear essentially to be guard bands to protect adjacent band users, rather than a meaningful effort to accommodate incumbent narrowband users or future narrowband uses. There is no analysis of the current noise floor in this band; no analysis of the anticipated effect of the broadband conversion on ambient noise in the proposed narrowband segments (nor, for the matter of that, in the adjacent bands below 896 MHz and above 940 MHz); no prediction of narrowband system demand at 900 MHz in the near term or later; and no specific provision for resolution of interference to incumbent narrowband licensees following the realignment. Finally, there is no specific provision for reimbursement of costs and expenses for displaced licensees, or any identification of reaccommodation spectrum, since in many markets, the remaining narrowband segments are wholly inadequate to accommodate all displaced narrowband incumbents.[6]

[6] It is noted that EWA filed on April 17, 2019 a Petition for Rule Making requesting that the Commission designate the 800 MHz Guard Band spectrum as "green space" for B/ILT licensees who may be required to vacate T-Band

4. In short, the plan for the proposed reconfiguration of this band is incomplete; the proposal appears to be an attempt to generate revenues from broadband auctions without an ascertained need for the broadband service to be provided therein, and to accommodate a single business entity. Furthermore, it evidences inadequate attention to the needs of present and future narrowband users who are dependent on the availability of narrowband land mobile radio service for a plethora of important purposes and who cannot accommodate such expansion in existing land mobile allocations due to crowding. JVCKENWOOD is of the view that this proposal should be postponed for several years, and revisited only after reopening the 900 MHz band for applications for new and modified facilities; until after a reasonable period of time when the demand for narrowband 900 MHz service can be fairly determined through unrestricted application filing; and until a reasonable assessment can be made of the relative need for broadband service, *versus* narrowband service in this band (given the fact that 5G systems are now being implemented). In any case, a specific relocation proposal and a plan for expense reimbursement and interference resolution should be developed, based on an assessment of ambient noise, potentially increasing ambient noise, and the anticipated effect of broadband operation adjacent to narrowband segments on relocated narrowband incumbents. The *Notice* proposal is incomplete, not fully justified, and it should not be implemented now.

II. The Demand for Narrowband Licenses in the 900 MHz Band Has Not Been Fairly Determined, and the Demand for Broadband Service at 900 MHz is Merely Presumed.

5. The 900 MHz band has had no reasonable chance to mature as a narrowband allocation since 2004. Though the band was first allocated for the current purpose in 1986, it was effectively frozen to applicants between 2004 and mid-2013. Even in 2013, the freeze was lifted

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spectrum, and for 900 MHz incumbents "whose narrowband systems may need to be moved to replacement frequencies as part of a transition to 900 MHz broadband." The filing of this Petition evidences the inchoate nature of the instant *Notice* proposal relative to the relocation of incumbents. EWA is apparently attempting to fill the gaps in the proposal partially, but incompletely enunciated in the instant *Notice*.

only in a limited fashion, subject to consent in each case by Sprint (then Sprint/Nextel) due to the "temporary" use of the 900 MHz band to accommodate displacements[7] during the Sprint/Nextel 800 MHz rebanding process. In June of 2013, the Commission finally allowed utilities and other commercial entities to file applications for new spectrum licenses in the 900 MHz B/ILT band (896-901/935-940 MHz), thus partially lifting a freeze that had been in place on applications for new licenses in this band since 2004. The 2013 Order held that eligible applicants would be allowed to file applications for new licenses in the 900 MHz B/ILT band in any National Public Safety Planning Advisory Committee (NPSPAC) region where the 800 MHz rebanding process was not yet complete, as long as the application is accompanied by a letter of concurrence from Sprint Nextel. Previously (i.e. between 2008 and 2013), the Commission would accept applications for new licenses in the 900 MHz B/ILT band only in those NPSPAC regions where rebanding had been complete for at least six months. Thus, the 900 MHz band was effectively warehoused with respect to new narrowband 900 MHz applications, for a decade. Then, a scant year later, in November of 2014, EWA and pdvWireless filed their *Petition for Rule Making*, RM-11718, which proposed a major rebanding of the 900 MHz band. The Petitioners suggested at the same time that there was *a need to re-freeze the band* for new applications to prevent exploitation (thus to avoid potentially increased expenses for pdvWireless), by means of opportunistic, speculative licensing. This proposal alone, advocated aggressively by EWA and pdvWireless between 2014 and the present time[8], would have and clearly has had a substantial chilling effect on plans and applications for new 900 MHz licenses. EWA and pdvWireless enjoy

[7] The Commission chose the 900 MHz band as a temporary home for Sprint Nextel's 800 MHz band commercial operations, to create "green space" that would facilitate the exchange of spectral locations in the 800 MHz band between Sprint Nextel and public safety licensees.

[8] To be clear, EWA may not itself have advocated for the freeze *per se*, other than in the 2014 Petition. EWA did not, however, retract the suggestion of a need to re-freeze the band as it actively advocated the entire RM-11718 proposal between 2014 and the present time.

a good deal of credibility in the land mobile radio industry. Given that, and given the extraordinary disruption to potential and incumbent narrowband licensees that would inevitably stem from the EWA/pdvWireless proposal, those eligible entities planning construction of new or expanded B/ILT or SMR systems would be completely discouraged from effectuating them at 900 MHz. They would be doing so in the face of a proposal that called for a wholesale reconfiguration of the band almost immediately with no specific proposal for relocation or reimbursement of incumbents. It would be unthinkable to apply for a new or expanded 900 MHz system, given the risk of a lost investment in the short term.

6. Even if the EWA/pdvWireless rulemaking petition hadn't been enough to stifle any normal development of the band (notwithstanding extreme overcrowding of the UHF and 800 MHz bands) between 2014 and September of 2018, the Wireless Telecommunications Bureau, by means of a *Public Notice,* DA 18-949, released September 13, 2018, announced a "temporary" freeze, effective *that same day it was announced,* on the acceptance of certain applications related to part 90 services operating in the 896-901/935-940 MHz spectrum band ("900 MHz band") *until further notice*. That freeze continues, of course, to the present time. It is indisputable, therefore, that there has not been a legitimate opportunity for B/ILT or SMR eligibles to plan new or expanded narrowband systems at 900 MHz since 2004, and to the present date. This history of the 900 MHz band precludes a present-date ability to fairly evaluate the current demand for narrowband 900 MHz licenses and operation, or to compare that level of demand to the heretofore unquantified benefits of reallocation of the majority of the band for broadband operation.

7. Eligibility for narrowband licensing in the 900 MHz B/ILT band on a site-by-site basis (should such be permitted to occur) is extremely flexible and should be given a fair chance to

develop. The band is useful for base and mobile operations in support of various commercial (*e.g.*, utility, transportation, manufacturing and energy) and non-commercial (*e.g.*, clerical, philanthropic, educational, medical) activities.[9] The *Notice*, at paragraph 1, acknowledges that "(n)arrowband operations continue to be critical to certain users of PLMR bands…"[10] Although B/ILT licenses are intended for private internal communications, the Commission has flexibly allowed licensees to modify their licenses to permit the provision of commercial communications services or assign their licenses to another entity for commercial use.[11] Narrowband licensees use their B/ILT communications facilities to ensure safety of operations, protect their plants, and enable the cost-effective production of goods and services offered to the public. Narrowband use of the band is, and will be increasingly critical for American business and industry, especially in

[9] *See* 47 C.F.R. §§ 90.31, 90.33, 90.35, 90.603.

[10] Notwithstanding this acknowledgement of the critical importance of narrowband applications in this band, the Commission's justification for the rebanding plan in the Notice proposal is, by contrast, remarkably vague. It states that "(i)n light of the continuing evolution of technology and the marketplace, and consistent with the Commission's recent efforts to increase access to flexible-use spectrum (footnote omitted), we propose to reconfigure the 900 MHz band to facilitate the development of broadband technologies and services as well, including for critical infrastructure." But this is not a "flexible use" proposal, in that it is not a broadband overlay that would allow the continuation of incumbent narrowband uses. Instead, it is an old-fashioned reallocation of spectrum and a planned eviction of narrowband uses without adequate protection or reaccommodation of incumbents, or accommodation for future uses. The Commission states at paragraph 14 of the Notice that it believes that the proposal "meets the requirements for the allocation of flexible use spectrum under section 303(y) of Communications Act." It claims that "Section 303(y) allows the Commission to allocate spectrum for flexible uses if the allocation is consistent with international agreements and if the Commission finds that: (1) the allocation is in the public interest; (2) the allocation does not deter investment in communications services and systems, or development of technologies; and (3) such use would not result in harmful interference among users." While it is debatable whether condition #1 is achieved by this proposal, it is quite clear that the proposed allocation will continue a long history of regulatory impediments to investment in narrowband communications services and systems and development of narrowband technology. Furthermore, as is discussed *infra*, this proposal would predictably result in interference to narrowband users.

[11] Subsequent to grant of a 900 MHz B/ILT license, a licensee may apply to modify the license to permit commercial operation on the license or to assign the license to another entity for commercial use. *See 47 C.F.R.* § 90.621(f). At paragraph 2 of the *Notice*, the Commission notes that SMR facilities, licensed by MTA, traditionally has been used for dispatch services, but now, digital SMR facilities allows new features and services, including internet access, two-way acknowledgment paging, inventory tracking, and fleet management. Meanwhile, B/ILT radio systems "serve a variety of communications needs to support the day-to-day business operations, safety, and emergency needs of entities in such industries as land transportation, utilities, manufacturing, and petrochemicals, including smart grid applications such as advanced metering infrastructure."

view of the statutorily mandated [12] reallocation of the band 470-512 MHz and auction for commercial broadband use in certain markets.

8. The record in this proceeding to date amply establishes that the uses of narrowband 900 MHz facilities are significant and urgent, *potentially* expanding and developing (to the extent not precluded by overregulation), and are not easily supplanted with broadband facilities. Utilities are important users of 900 MHz wireless telecommunications systems which have invested heavily and hold licenses in the 900 MHz band in order to provide mission-critical services such as Supervisory Control and Data Acquisition, electrical service restoration communications, and power plant security operations. Private 900 MHz communications systems are critical for disaster relief efforts by utilities facilities because commercial broadband infrastructure is far less resilient than is narrowband deployed equipment.

9. According to the Edison Electric Institute, in comments filed in October of 2017 in response to the *Notice of Inquiry* in this proceeding, narrowband 900 MHz operation is critical in infrastructure reconstruction after natural disasters due to its inherent reliability, low latency and security, and its instant availability in rural areas:

> In fact, during natural disaster recovery efforts, electric companies use 900 MHz and adjacent networks for myriad critical purposes, including internal recovery planning and customer communications. Electric companies also use the information gained via these networks to coordinate with the Federal Emergency Management Agency, the Department of Homeland Security, the White House, and numerous other federal, state, and local entities like Emergency Operation Centers ("EOCs") to help assess and address recovery-related needs. Electric companies rely on their private internal 900 MHz communications facilities rather than commercial networks for these crucial and time-sensitive communications because these PLMR systems are the only systems able to provide the necessary combination of "low latency (under 20 milliseconds) and ultra-high reliability (99.9999%)," and the ability to "serve rural and suburban communities as well as more populated areas[.]" Communications over 900 MHz networks are highly reliable, in part because current users understand and are responsive to each

[12] *See* The Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, 126 Stat. 156, at Section 6103 et seq.

> other's critical requirements, and the Commission has thus far generally ensured that critical communications over 900 MHz networks remain available and free from interference.
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> (Edison Electric Institute Comments, at pages 8-9)

Additionally, electric companies rely on the use of narrowband frequencies for Advanced Metering Infrastructure (e.g., smart meters) and other important private applications. American business and industry should not be disaccommodated in their individual operations by the overcrowding of the UHF and 800 MHz bands. There should be a reasonable opportunity to develop private, narrowband 900 MHz systems and to deploy them before any consideration is given to a 900 MHz broadband service. In the meantime, the Commission's attention with respect to business and industrial broadband needs should be laser-focused on implementing 5G in the mid-band [13] in support of both commercial service provision to individuals and to facilitate private, local 5G networks in support of transportation, manufacturing and other businesses and industries in the United States. When that is done, it might be a fair time to reassess the need to create a small broadband network in the 900 MHz band, but it is not timely to do so now.

10. At paragraph 12 of the *Notice*, the Commission notes that the proposed broadband segment of 3/3 megahertz "is less than what the Commission has designated for other flexible-use broadband services in the past," [14] and so it anticipates that the end users of 900 MHz broadband services "may not be traditional wireless retail consumers." Furthermore, notably, the Commission admits that a 3/3 megahertz broadband link "would have relatively limited capacity and speed compared to existing nationwide and regional 4G networks and, by itself, might not be able to serve direct-to-consumer demand in densely populated areas." These admissions reveal that the instant proceeding is nothing more than an exercise in planning for obsolescence. The

[13] See, *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, GN Docket No. 18-222, 33 FCC Rcd. 6915.
[14] The Commission notes that the bandwidth per license ranges from 5 megahertz to 20 megahertz for Advanced Wireless Services (AWS -3) licenses; from 6 megahertz to 12 megahertz for 700 MHz licenses; and from 10 megahertz to 30 megahertz for broadband PCS licenses.

Commission is, right now, in the midst of a revolution in broadband service provision, not only in terms of 5G service to "traditional wireless service customers" but also in terms of facilitating Industry 4.0, the incorporation of flexible manufacturing, transportation and other industrial and business infrastructure using private local 5G networks and commercial networks in the bands 3.7-4.2 GHz and 5.925-7.125 GHz. It is not a useful exercise in the instant *Notice* to speculate about possible, 900 MHz 4G broadband applications that (1) are clearly not internationally harmonized; (2) are considerably smaller than all other, prior-generation broadband systems of recent creation, and (3) are, at best, in the experimental stage[15] now at 900 MHz. There is no demonstrated need to proceed with a difficult, and inadequately planned band reallocation now, before there is any demonstrated demand for a 900 MHz broadband allocation. The Notice, at Paragraph 12, reveals that there is not such a demonstrated demand now. It states that: "(f)urther, because of the challenges of clearing 900 MHz narrowband incumbents from the broadband segment, we believe that this spectrum is more likely to be used to serve PLMR customers." It would make sense to react to a request from PLMR customers for the proposed 900 MHz broadband allocation (as distinct from, for example, a mid-band 5G broadband proposal). Absent such a request, however, the proposed action is speculative at best. It is, however, an unjustified departure from (and a preclusion of) the much more compelling need to utilize the entire 900 MHz band to alleviate narrowband overcrowding in the UHF and 800 MHz land mobile bands.

11. It is well understood that commercial broadband service today does not necessarily address all needs of business and industrial users, including for mission-critical communications.[16] Indeed, current commercial broadband service is configured to address the mobile broadband needs of individuals and not of business and industrial users, which have

[15] *See* the *Notice*, at Paragraph 7.
[16] *Id.*

unique safety, security, reliability, privacy, property protection and other specific needs. High-speed commercial broadband is not available for some businesses now in rural areas. Establishing that fact, however, is a far cry from establishing that there is a need to create a new, unusually small, 3/3 megahertz broadband system at 900 MHz. The Commission has a good, solid plan for implementing 5G broadband through a combination of commercial mobile networks and private local 5G networks in the mid-band spectrum. 5G networks stand to revolutionize industrial operations and manufacturing as well as to provide all of the private communications needs discussed in this proceeding that are not already available right now, using narrowband 900 MHz systems. Instead of proceeding with the instant proposal, the Commission should instead remove the freeze on new and modified 900 MHz narrowband systems; accept applications for such and allow the band to develop for a few years without regulatory preclusion, and then, after a period of years, reassess the relative need for narrowband and broadband operation in the 10 megahertz of spectrum at 900 MHz after the United States implements 5G technology at 3.7 GHz.

12. Finally, the instant proposal is not part of any comprehensive plan for broadband rollout in the United States, and it has never been such. Because of this, the *Notice* proposal does not establish that the disruption of 900 MHz narrowband licensing at the present time is in the public interest or that the establishment of a broadband allocation within the 900 MHz band is a preferential allocation of spectrum pursuant to Section 307(b) of the Communications Act of 1934, as amended. The United States established in 2010 a comprehensive, ten-year plan for broadband access by all Americans (including critical infrastructure and other business entities). In early 2009, Congress directed the Commission to develop a National Broadband Plan (NBP) to ensure every American has "access to broadband capability." In less than a year, pursuant to

that directive from Congress, the Commission developed and released the NBP to Congress. It is now over nine years old. The NBP, among other things, called for the reallocation of 500 MHz of spectrum for broadband use, principally mobile broadband. The first 300 MHz, which was to include spectrum in approximately the 222-3700 MHz band, would be made available within 5 years of the date of the NBP, and the remaining 200 MHz within 10 years of the date of the Plan. The Plan was submitted to and accepted by Congress. In October of 2010, the National Telecommunications and Information Administration (NTIA) released a "Plan and Timetable to Make Available 500 Megahertz of Spectrum for Wireless Broadband." Table 2-1 of that Plan listed a total of 2,263.9 MHz of spectrum which could be made available for mobile broadband and supporting fixed wireless broadband facilities. That was of course more than four times the amount of spectrum that was mandated by Congress for broadband reallocation in 2009. The Table made no reference whatsoever to the band 896-901/935-940 MHz or any portion of it. Any suggestion that the 900 MHz band, or any portion of it should be reallocated for broadband use should have been made at the time that the United States adopted a master plan for broadband spectrum reallocation in 2010 and an opportunity to consider that relative to alternative bands. Instead, it is being done *ad hoc*.

III. The Notice Does Not Protect Incumbent Narrowband Licensees From Interference, and it does not Provide a Workable Plan for Relocation of Incumbents or for Expansion of Narrowband Applications at 900 MHz.

13. At paragraph 12 of the Notice and elsewhere throughout the Notice, the Commission states that its "goal is to open the 900 MHz band for additional uses that will facilitate increased efficiency and encourage innovation, *while continuing to accommodate narrowband incumbents*" (Emphasis added). However, it is difficult to understand how the second part of this goal is to be accomplished. The Commission says that it is balancing the alleged need for a

broadband segment with the continued accommodation of narrowband incumbents by designating 897.5-900.5 MHz/936.5-939.5 MHz as the broadband segment, leaving two separate narrowband segments: a 1.5/1.5 megahertz segment (896-897.5/935-936.5 MHz) below the broadband segment and a .5/.5 megahertz segment (900.5-901/939.5-940 MHz) above the broadband segment.[17] As the Commission puts it, this "arrangement provides 1.5 megahertz of separation between the broadband segment and the 894-896 MHz Air-Ground Radiotelephone Service/932-935 MHz fixed microwave systems spectrum, and 500 kilohertz of separation between the broadband segment and the 901-902/940-941 MHz Narrowband Personal Communications Service spectrum." While the placement of the residual narrowband segments may or may not adequately protect adjacent *band* licensees, there is no discussion of the extent to which the narrowband licensees in either 500 kilohertz or 1.5 megahertz segment adjacent to the broadband segments will be protected from broadband interference. It certainly appears from this description that the proposed residual narrowband segments are in reality nothing more than guard bands to protect adjacent band users, but not narrowband incumbents, from broadband interference outside the 3/3 broadband segments.

14. This should be, but it is not, a major aspect of the *Notice* proposal. It was noted in the original EWA/pdvWireless Petition for Rule Making that there may have to be a guard band between the narrowband segment and the broadband segment proposed therein. It was unspecified, however, how much of a guard band would be necessary; what it could be used for (if anything), and how it would be administered. There is no such discussion in the *Notice* either. Nor is there a compatibility study incorporated in the record, on which the *Notice* proposal is

[17] By way of clarification, the Commission states that it proposes "that the broadband segment be composed of the existing channels with center frequencies from 897.5125/936.5125 MHz (channel 121) to 900.5/939.5 MHz (channel 360). *See* 47 CFR § 90.613. Channels 1-120 and 361-399 would continue to be designated for narrowband operations." *See* the *Notice* at paragraph 15.

based, relative to the proposed division between broadband and narrowband operations in the band. There is no indication in the record anywhere that addresses the current noise floor in the 900 MHz band in various environments, or the noise floor as it would be affected by the implementation of the broadband segments as proposed. The 900 MHz band is now very quiet in most environments and the extent to which that noise floor would be increased by broadband operation as proposed is highly relevant to determining predicted interference to narrowband licensees.

15. The Commission does note at paragraph numbered 24 of the *Notice* that the proposed rebanding of the 900 MHz band presents difficult challenges, given (among other things) the varied incumbent uses, and intensity of use in particular geographic areas. It notes that in certain areas of the country, the 900 MHz band is heavily encumbered,[18] with the greatest number of stations located in the coastal Northeast, the Carolinas, the Atlanta region, Florida, the Great Lakes region, the Gulf Coast area, coastal Washington State, and throughout California. In Los Angeles County, California and Broward County, Florida, *almost every 900 MHz channel is assigned*, including almost every channel in the proposed broadband segment. In contrast, in Cass County, North Dakota, a far less populated area, the Commission states that all SMR channels have been assigned, but no B/ILT channels are in use. There is nothing surprising about this. The larger urbanized markets have a strong need to use the 900 MHz band despite the long-term regulatory impediments and disincentives for using it, because they have no other alternative: in those same areas, UHF land mobile allocations are completely full, as is the 800 MHz band. But in these numerous crowded markets, there would have to be a plan for the reaccommodation of the displaced licensees into a much smaller residual band, and an analysis

[18] The Commission's Universal Licensing System database shows approximately 2,700 B/ILT sites (i.e., facilities operating on B/ILT channels that have not been converted to SMR use) at 900 MHz licensed to approximately 500 licensees.

to determine whether, and to what extent, the incumbent narrowband licensees could be accommodated in the small segments adjacent to a high-power, geographically ubiquitous broadband service. What the radio frequency environment is anticipated to be is not discussed at all.

16. There is not identified in the *Notice* a proposed relocation band that provides equivalent spectrum for displaced narrowband users at 900 MHz now. Instead, the Commission discusses in the auction context the means by which the narrowband licensees can be bought out by broadband licensees. Clearly, however, in the markets in which all or most of the channels are in use, including those in the designated broadband segment, it will not be possible to relocate ten megahertz of narrowband licensees into the proposed residual four megahertz of spectrum. Some will be displaced, and there is no place for them to go. All other land mobile bands in those same markets are completely full as well. The situation is not going to get any better with time, should the Commission comply with its statutory obligation to clear, and auction, the 470-512 MHz band. It is not only public safety licensees that would be displaced from the so-called "T-Band"; it is also the B/ILT licensees that will be displaced therefrom, and the 900 MHz band is not going to be available to them either.

17. Of greatest concern is the inchoate plan that the Commission has for addressing interference to residual, and relocated narrowband licensees and operations at 900 MHz. The *Notice* states at paragraph 32 that the Commission would require that a prospective broadband licensee must either reach an agreement to clear, or demonstrate how it will provide interference protection to, all covered incumbents relating to the county for which it seeks a 3/3 megahertz broadband license. By "covered incumbents" the Commission means any site-based licensee that is required under current rules to be protected by the placement of a broadband licensee's base

station at any location within the county. Thus, interference protection is to be determined on a case-by-case basis, with individual B/ILT licenses being placed in a distinctly disadvantageous position relative to negotiations with a broadband applicant. What, however, does interference protection actually mean in this context? There are no specific mileage separation requirements or frequency separation requirements between in-band narrowband and broadband facilities in the rules proposed.[19] Instead, there is only a generalized proposal at paragraph 73 of the *Notice* "to make broadband licensees responsible for preventing harmful interference to narrowband operations and for resolving any interference in the shortest time practicable." The definition of what constitutes harmful interference is the ITU definition that is incorporated in the Commission's rules at 47 CFR § 2.1(c). There, harmful interference is defined as interference which endangers the functioning of a radionavigation service or of other safety services or *seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with the ITU Radio Regulations*. Since B/ILT and most SMR operations are not safety services and none is a radionavigation service, it would apparently be the obligation of narrowband licensees receiving interference to establish to the satisfaction of either the broadband licensee or the Commission that the narrowband licensee's operations are seriously

[19] The *Notice* does note however that, under existing 900 MHz co-channel separation requirements, 47 CFR § 90.621(b), co-channel systems generally must comply with a minimum spacing criteria of at least 113 kilometers (70 miles) separation distance between base stations and it asks whether this requirement should be incorporated in the rules proposed to broadband base station operations in order to protect co-channel narrowband licensees. Why any other requirement would be applied is difficult to determine. Furthermore, the Notice asks about defining interference in terms of the field strength present at the 900 MHz narrowband receiver. It is noted that Section 90.672(a)(1)(i)(A)-(B) currently defines unacceptable interference in the 900 MHz B/ILT Pool as a median desired signal strength of -88 dBm or higher as measured at the radiofrequency input of the receiver of a mobile unit, or -85 dBm or higher as measured at the radiofrequency input of the receiver of a portable station. Alternatively, harmful interference could be defined as receiving a median desired signal strength of -98 dBm or higher as measured at the input of the receiver of a mobile unit, or -95 dBm or higher as measured at the radiofrequency input of the receiver of a portable station . Suggestions for accounting for ambient noise increases in the band include incorporating fade margins of 10 dB. None of these suggestions is supported by either field testing or bench testing results and a complete study is called for before any interference definition is accepted on a blanket basis. This is a unique interference situation in that there are no guard bands and potentially very small distance separations between broadband base and handset devices and narrowband receivers, in-band. There is precisely one chance to get this standard correct, because *post hoc* interference resolution in this band will not work.

degraded, obstructed or repeatedly interrupted. This is a high burden for a narrowband B/ILT licensee to be expected to meet. The Commission has no enforcement resources to bring to bear on these cases, and there is a disparity between the resources available to a narrowband licensee and the broadband licensee causing interference. This is not a workable interference resolution plan. Nor is it a reasonable effectuation of the Commission's fundamental obligation to prevent interference in the allocation process so as to ensure compatibility *ex ante*. The Commission should not proceed with this proposal absent compatibility studies which determine specific technical parameters that will predictably prevent the interference to narrowband operations from broadband operations. That information is not now in the record. What is in the record, on the other hand, is ominous. Edison Electric Institute stated in 2017 as follows:

> Although noise floor levels in the 2/2 and 3/3 MHz proposal may be appropriate in a cellular environment, the proposal would reduce existing system performance for electric company 900 MHz PLMR systems. The proposal does not suggest a new 3/3 MHz broadband provider will be able to coexist with incumbent licensees, and instead proposes to raise the noise floor, forcing incumbent licensees to adjust to the new operations. This proposal ignores the low noise floor environment currently and historically existing in the 900 MHz band, which licensees rely on for mission-critical communications. Exacerbated by the lack of guard bands, the magnitude of harmful, wideband interference that the proposed 3/3 MHz broadband operations would create would completely eliminate the ability of many existing electric company PLMR 900 MHz systems to continue operations.

Nothing in the instant *Notice* would address this concern, nor is it even discussed.

IV. Conclusions.

18. The *Notice* in this proceeding has not established that there exists a current need to convert three-fifths of the 900 MHz band from narrowband configuration to broadband. To do so would create substantial disruption of incumbent licensees' operations in the band. Left unresolved and unexamined is: (1) whether there exists an unmet need that B/ILT, SMR and

critical infrastructure entities have for a small broadband service in a 3/3 MHz configuration, and (2) if so, whether that need can be met by existing and near-term broadband service providers using 5G, which is now on a very fast implementation track. There is no indication of a lack of functionality for incumbents that could be remedied by a very small, prior generation broadband system created by the proposed reallocation of spectrum. JVCKENWOOD suggests that there is no such unmet need. Rather, the need is to deregulate, unencumber and open the 900 MHz band to allow for some relief from the narrowband congestion that exists in the UHF and 800 MHz land mobile bands now and to permit new and expanded narrowband 900 MHz systems.

19. Rebanding now would entail costs that are not justifiable and the process is not sufficiently delineated. The process would be on a scale of complexity that is similar to the 800 MHz rebanding effort [20] and it would have a preclusive effect in many markets on the ability of narrowband incumbents to expand their operations at 900 MHz, and for new licensees to construct new narrowband systems. There has never, since 2004, been a fair opportunity for narrowband land mobile use to develop in this band, unencumbered by intentional regulatory impediments, and the Commission does not have a good idea of the current demand for narrowband 900 MHz systems. Moreover, the displacement of B/ILT from the 470-512 MHz band by the statutory, impending auction obligation necessitates reservation of narrowband replacement spectrum at 900 MHz.

20. The Commission has not enunciated a workable interference prevention plan; it provides no guard subbands to protect relocated narrowband licensees from broadband interference; it proposes no specific geographic separation distances between broadband base stations and narrowband incumbents; the narrowband residual segments are configured so as to

[20] The 800 MHz rebanding process was a necessity; it resulted from acute interference problems that required resolution. The rebanding in this case would be purely elective.

protect adjacent band users but not narrowband incumbents. And the Commission has not accounted for the noise floor increases that would adversely affect narrowband licensees in what is now a relatively quiet band: a characteristic on which incumbent systems rely.

21. A better spectrum management plan would be to abandon or postpone consideration of a 900 MHz broadband system until: (1) after applicants for new and modified narrowband 900 MHz systems have a chance to develop over a period of years; (2) after the mid-band 5G networks, both commercial and private, are permitted to develop and a reasonable objective assessment of the need for an alternative 900 MHz broadband service can be made; and (3) assuming that there is found to be a need at that time, when a transitional rebanding plan that includes cost reimbursement and equivalent, replacement spectrum can be developed with interference/compatibility studies based on field and bench tests can be conducted, all so as to give a true picture of the options available for a rebanding plan that is fair to all.

Therefore, the foregoing considered, JVCKENWOOD USA Corporation respectfully requests that the Commission take no action with respect to the *Notice* proposal at this time.

Respectfully submitted,

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